NWS FORM E-5 (11-88) **(PRES. by NWS Instruction 10-924)** **U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE**	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH **December** YEAR **2016**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283	SIGNATURE **Bill Parker, Meteorologist In-Charge** DATE **02/17/2017**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

X **An X inside this box indicates that no river flooding occurred within this Hydrologic Service Area.**

Synopsis…

December was another warm month. Rainfall was below normal across areas north of Interstate 20; while, it was at or above normal below I-20. There were a couple of cold fronts during that did allow night time temperatures to drop below freezing during the month. The colder temperatures only lasted a few days before above normal temperatures once again prevailed. This month, our climate sites in the HSA (Hydrologic Service Area) were divided between above and below normal rainfall. Hattiesburg received the most rain with only 7.06 inches total for the month while Greenville received the least rainfall of 2.86 inches. It was also a pretty warm month. Our climate sites ranged from 2 degree above normal at Greenwood to 5.1 degrees above normal at Meridian. The year 2016 was a warm one in WFO Jackson forecast area. Since records were kept at these ASOS sites, Vicksburg Tallulah and Meridian had their warmest year; Greenville had its 2nd warmest; Jackson, Greenwood Leflore, and Hattiesburg Chain had their 3rd warmest year on record.

Weather Highlights…

The month started off with high pressure building into the region allowing for mild days and cool nights. An active southerly jet brought some rainfall back into the region around the 3rd. Several Gulf of Mexico low pressure centers brought several rounds of much needed rainfall to the region. A cold front moved through on the 6th finally bringing an end to much of the rainfall. Rainfall amounts ranged from 2” to 4”. A few light showers fell over western sections of the HSA around the 8th and 9th as an upper level short wave moved across the area. This was followed by a few days of much colder temperatures.

A series of cold fronts moved into and eventually across the area from the 12th into the 14th. The heaviest rainfall was centered across southern areas where 1” to 3” fell. Night time lows temperature once gain fell into the 30s and 40s across the HSA.

As high pressure moved east, warm, moist southerly winds produced a rapid warm up. Another cold front moved rapidly across the Gulf States on the 18th bringing more significant rainfall. Rainfall ranged from ¼” to 2” north of I-20 and ½” to 1.5” south. Following the front, high pressure built into the area bringing some of the coldest air of the season. Highs were in the 30s and 40s while lows fell into the teens and 20s.

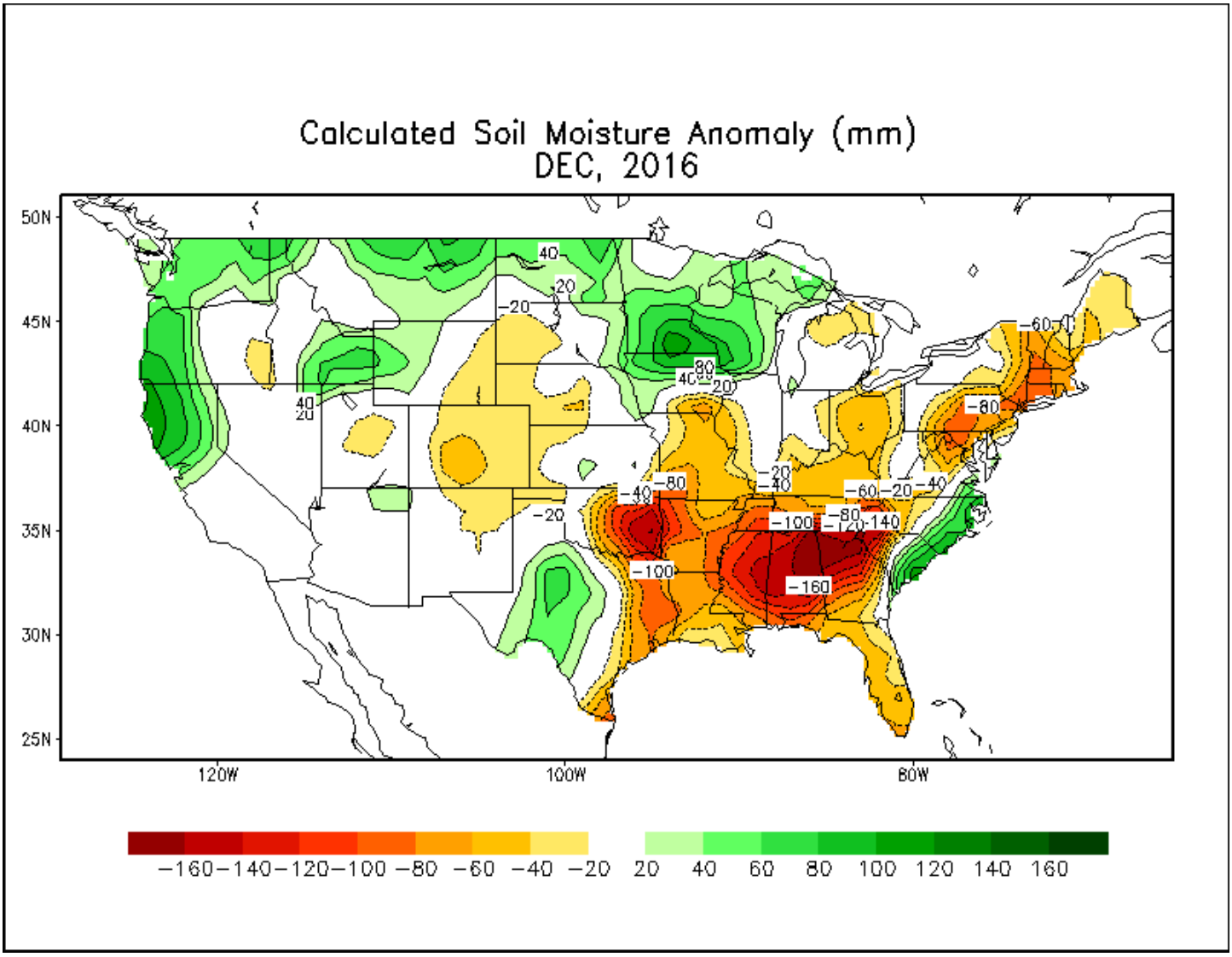
A mostly dry cold front moved through the HSA on the 22nd. An upper level ridge across the Gulf of Mexico slowly drifted east northeastward into the southeastern U.S. from the 22nd through the 26th. The ridge blocked the movement of frontal systems into the ARKLAMISS Region through the 26th. Warm and moist southerly winds helped to bring temperatures into the 70s for Christmas Day and the days following. A few light showers occurred on the 26th.

By the 27th, the upper ridge began to flatten out across the northern Gulf of Mexico allowing a cold front move into the Central Mississippi and stall before yet another cold front pushed across the region on the 29th. High pressure built into the area from the 29th into the 30s. During this time period, rainfall across the HSA ranged from ½" to 2.00".

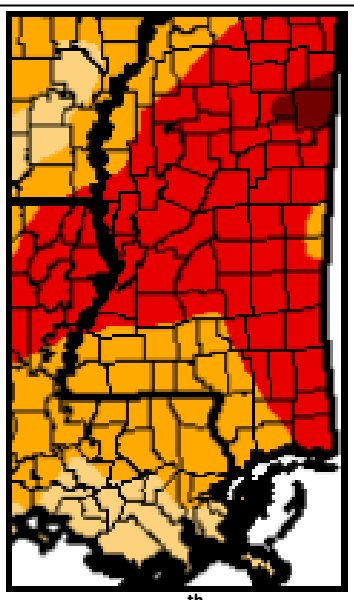
High pressure drifted eastward from the 30th to the 31st bringing warm, moist southerly air into the region. Rainfall was generally less than ¼". Another cold front pushed into the HSA late on the 31st and stalled. Rainfall ranged from less than ¼" across the northwest to in access of 2.5" across the southeast.

River and Soil Conditions

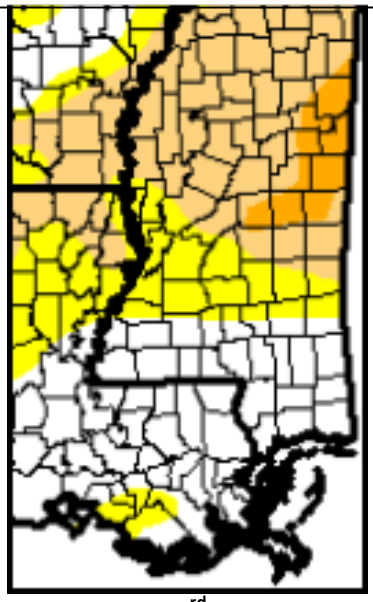
Soil Moisture Map:



Drought Comparison:



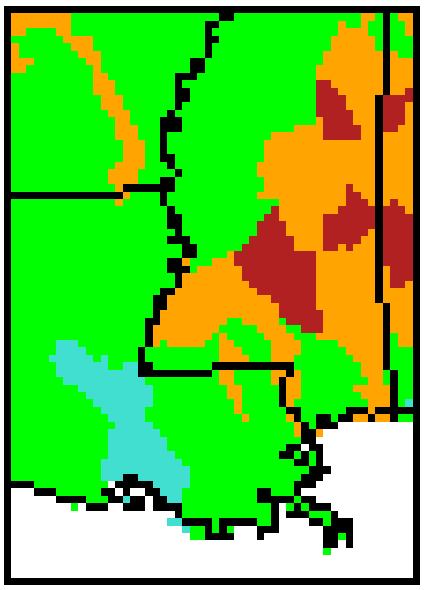
November 29th, 2016



January 3rd, 2017

Streamflow:

The United States Geological Survey's (USGS) December 2016 river streamflow records were compared with all historical December streamflow records. Normal streamflow was seen across much of the Yazoo Basin and the Northeast Louisiana river basins. Normal to much below streamflow was seen everywhere else in the HSA.



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

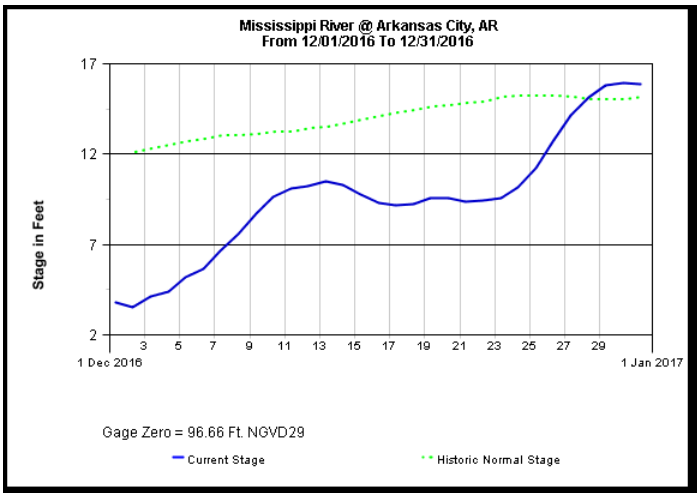
River Conditions:
There was no river flooding during the month of December.

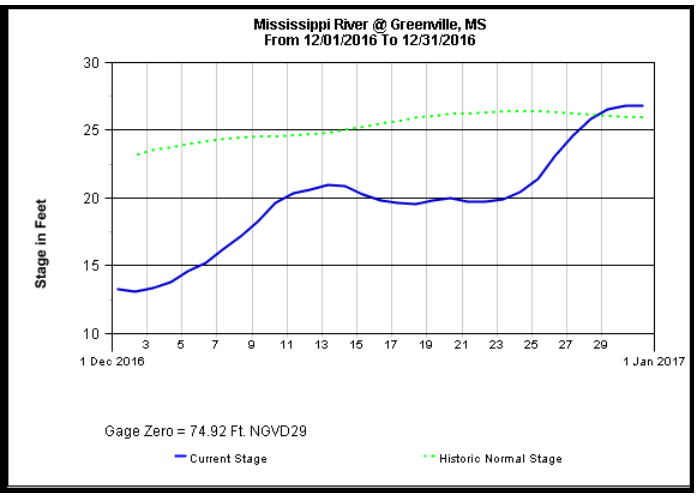
Climatic Outlook and Flood Potential:
The climatic outlook shows good chances for above normal temperatures over the next three months for the whole HSA. In regards to precipitation, the outlook indicates decent chances for below normal precipitation throughout the entire HSA. Thus, based on current soil moisture, streamflow, and the 3-month climate outlook, the flood potentials are thus:

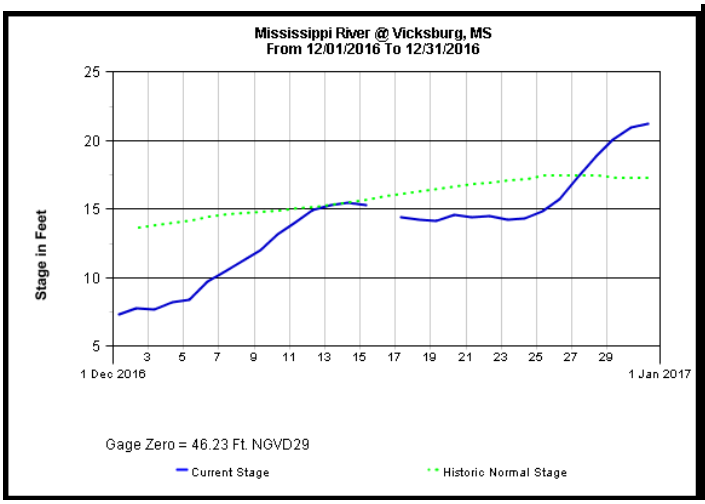
Pearl River System: Below Normal.
Yazoo River System: Below Normal.
Big Black River System: Below Normal.
Homochitto River System: Below Normal.
Pascagoula River System: Below Normal.
Northeast LA and Southeast AR: Below Normal.
Tombigbee River System: Below Normal.
Mississippi River: Below Normal.

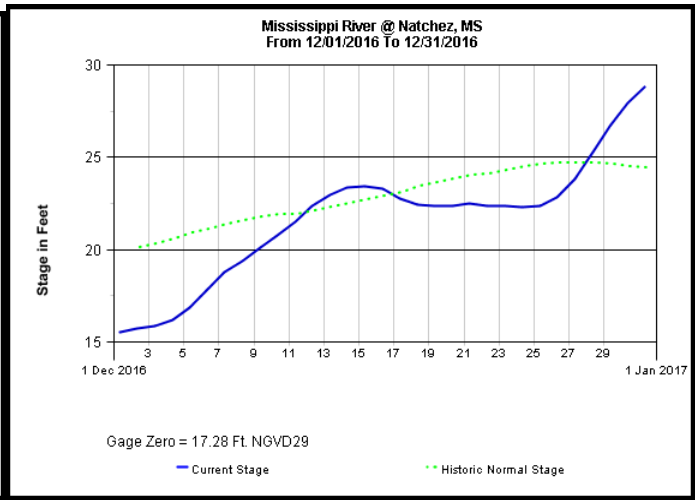
Mississippi River Plots December 2016
Plots Courtesy of the United States Army Corps of Engineers

Monthly Preliminary High and Low Stages:









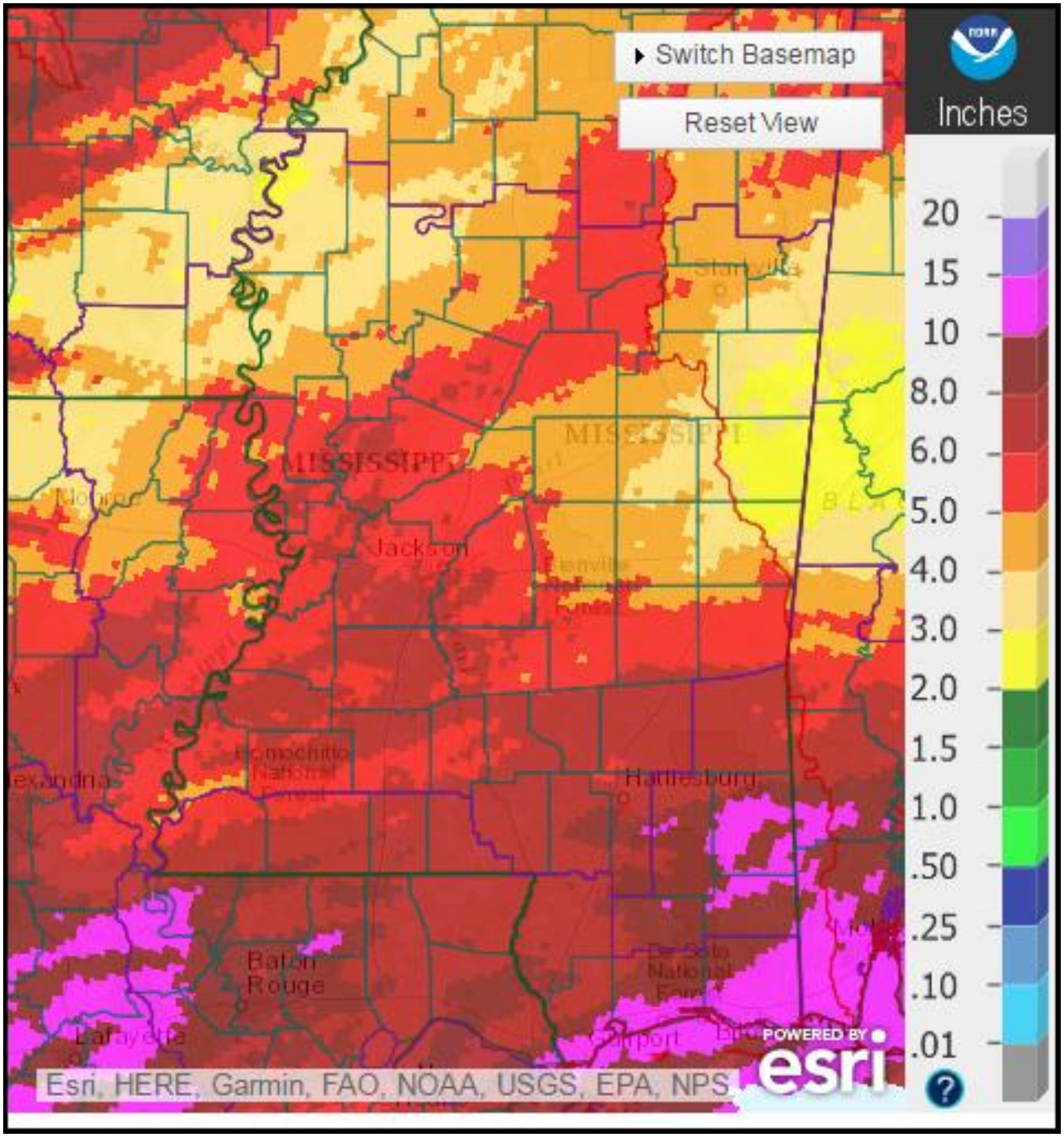
Location	Flood Stage (ft)	High Stage (ft)	Date	Low Stage (ft)	Date
Arkansas City	**37**	**16.00**	**12/30**	**3.45**	**12/02**
Greenville	**48**	**26.90**	**12/31**	**13.03**	**12/02**
Vicksburg	**43**	**21.49**	**12/31**	**7.27**	**12/01**
Natchez	**48**	**29.18**	**12/31**	**15.45**	**12/01**

Rainfall for the Month of November

During the period from 7 am November 30th until 7 am December 31st, the largest rainfall amounts from NWS Cooperative Observers were:

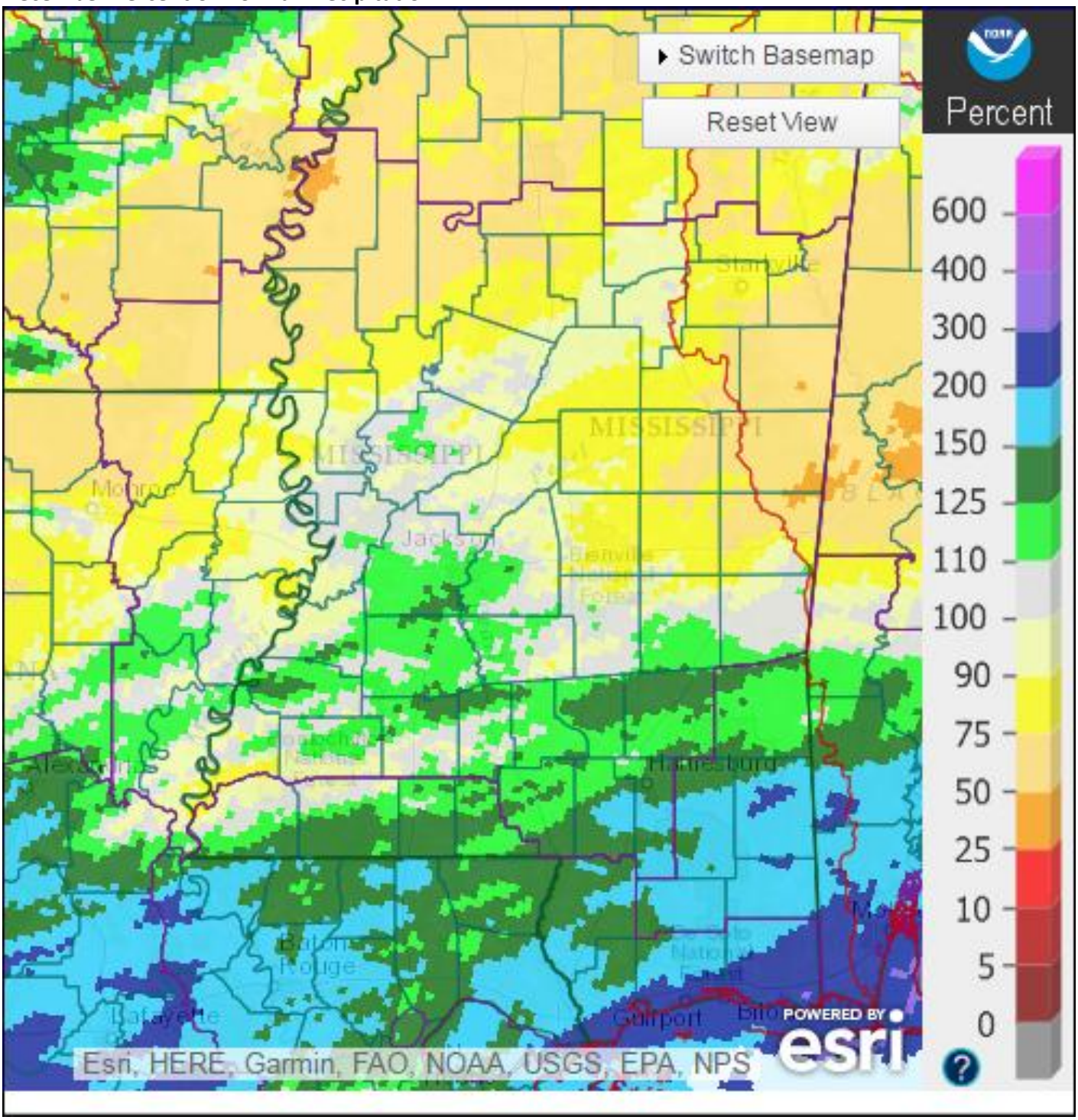
This will be updated at a later time

December Rainfall Estimates:



Note: Observer rainfall and MPE in December may differ due to time differences.

December Percent of Normal Precipitation:



Note: Observer rainfall and MPE in December may differ due to time differences.

December Rainfall for Selected Cities:

City (Airport)	Rainfall	Departure from Normal	2016 Rainfall	2016 Departure from Normal
Jackson (KJAN)	5.74	0.59	63.39	+9.25
Meridian (KMEI)	3.90	-1.16	45.74	-10.43
Hattiesburg (KHBG)	7.06	2.15	63.91	+4.74
Vicksburg (KTVR)	6.27	0.66	61.09	+6.35
Greenville (KGLH)	2.86	-2.76	50.12	-2.52
Greenwood (KGWO)	4.69	-0.96	47.50	-4.27

Total Flood Warning products issued: 0
Total Flood Statement products issued: 0
Total Flood Advisories MS River: 0
Daily Climate and Ag WX Products (AGO'S) issued: 31
Daily CoCoRaHS Rainfall Products (LCO'S) issued: 31
Daily River and Lake Summary Products (RVD'S) issued: 31

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Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District